



Drainage Reports

**SOUTHBRIDGE EXPANSION
CONCEPTUAL
DRAINAGE REPORT**

SCOTTSDALE, ARIZONA



By:

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Scottsdale, AZ 85251**

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TABLE OF CONTENTS

Contents

INTRODUCTION	3
EXISTING DRAINAGE CONDITIONS	3
FEMA FLOODPLAIN CLASSIFICATION.....	4
PROPOSED CONDITIONS.....	4
STORMWATER RETENTION	4

VICINITY MAP – EXHIBIT 1

CONTOUR QUARTER SECTION MAP – EXHIBIT 2

AERIAL PHOTOGRAPH – OVERALL SITE PLAN – EXHIBIT 3

AERIAL PHOTOGRAPH – TRIANGLE AND MARKETPLACE - EXHIBIT 4

AERIAL PHOTOGRAPH – SOUTHBRIDGE WEST - EXHIBIT 5

AERIAL PHOTOGRAPH – ROSE GARDEN - EXHIBIT 6

AERIAL PHOTOGRAPH – EXISTING USE - TRIANGLE AND MARKETPLACE - EXHIBIT 7

AERIAL PHOTOGRAPH – EXISTING USE – SOUTHBRIDGE WEST - EXHIBIT 8

AERIAL PHOTOGRAPH – EXISTING USE – ROSE GARDEN - EXHIBIT 9

AERIAL PHOTOGRAPH – PROPOSED USE - TRIANGLE AND MARKETPLACE - EXHIBIT 10

AERIAL PHOTOGRAPH – PROPOSED USE – SOUTHBRIDGE WEST - EXHIBIT 11

AERIAL PHOTOGRAPH – PROPOSED USE – ROSE GARDEN - EXHIBIT 12

FIRMETTE – EXHIBIT 13

SOUTHBRIDGE EXPANSION PRELIMINARY DRAINAGE REPORT

INTRODUCTION

The Southbridge Expansion Project is a mixed use development project generally located between Scottsdale Road and just west of Goldwater Boulevard, along the south side of the Arizona Canal and along the north side of 5th Avenue. The total area is approximately 6.5 acres. Exhibit 1 is a vicinity map of the site.

This mixed use development is laid out as 4 separate sites with various uses as follows:

The four sites are currently occupied by a combination of office, retail, commercial, and restaurant use. The easterly side of the Rose Garden site is a public parking lot. There is a small vacant parcel on the west end.

1. Triangle Site
2. Marketplace Site
3. Southbridge West Site
4. Rose Garden Site

Exhibits 3 – 6 show the various buildings overlaid on an aerial photograph.

EXISTING DRAINAGE CONDITIONS

The Triangle and Marketplace sites are located south of the Arizona Canal and just west of Scottsdale Road. The Southbridge West and Rose Garden sites are south of and adjacent to the Arizona Canal lying east and west of Goldwater Boulevard.

The elevated banks of the canal provides a barrier to any offsite drainage affecting the sites.

Based upon the City of Scottsdale Contour Quarter Section Map (See Exhibit 2), the onsite runoff from the Triangle and Marketplace sites drain towards the east and southeast to existing streets with 6 inch vertical curb and gutters.

The Southbridge West and Rose Garden sites drain in a southeasterly direction to existing streets with 6 inch vertical curb and gutter.

There is an existing City storm drain behind the Southbridge West and Rose Garden sites, but the existing sites are not connected to the storm drain.

The current overland flow across all four sites does not affect any adjacent properties.

All four sides are largely covered by buildings or hardscape parking lots. The Rose Garden site has a small portion of landscaping and a 5000 SF vacant parcel at its west end.

FEMA FLOODPLAIN CLASSIFICATION

The Triangle, Marketplace and Southbridge West sites are all classified as FIRM Zone “X”. The eastern $\frac{3}{4}$ of the Rose Garden site is classified as FIRM Zone “X” and the western $\frac{1}{4}$ is Zone “X” <1 foot, all according to FIRM Panel Number 2235 suffix “L”, dated 10-16-2013. A firmette is attached as Exhibit 13.

PROPOSED CONDITIONS

It is anticipated the proposed drainage conditions will be similar to the existing conditions. The majority of the sites will continue to be covered in buildings and hardscape with small portions of landscape enhancements. The new buildings at Southbridge West and Rose Garden will probably tie roof drains into the storm drains on the canal banks.

The proposed conditions will not generate substantially different runoff quantities than the existing conditions.

No offsite drainage improvements are anticipated. No retention is currently provided.

The new developments will need to address first flush requirements according to the City DSPM. This would apply to the non-rooftop areas such as access drives and hardscape adjacent to drives or streets. Any onsite retention available in landscape planters beds or tree wells will be used for first flush runoff. Any excess first flush will be collected in stormceptors and directed to underground storm water storage systems or available storm drains.

All of the new development sites will be built next to existing streets. Minor adjustments to the existing curb, gutter and half street adjacent to the developments are expected in order to conform to finished floor elevations and ADA requirements.

Flows within streets will be calculated to verify they do not impact adjacent existing developments and address maximum depth of streets flow requirements according to the City DSPM.

STORMWATER RETENTION

As discussed with City staff, the City’s stormwater policy for developed sites is based on storing the difference between the existing and proposed developments, while maintaining any existing retention.

None of the existing sites provide retention. Existing site uses are shown in Exhibits 7 - 9. Proposed uses are shown on Exhibits 10-12.

Weighted C values were calculated using 3 categories. Impervious area consisted of pavement, concrete and rooftops. Desert landscaping was used for the majority of the existing landscaping. Landscaping with weed barrier was used where the landscape consisted of artificial turf, or heavily

compacted and/or stabilized dirt and/or gravel. The sites consist of:

Existing C Value Calculations					
Site	Total Area (SF)	Impervious Area (SF) C = 0.95	Desert Landscaping (SF) C=0.45	Landscape w/weed barrier (SF) C=0.83	Weighted C value
Triangle Site	102,454	99,254	2,350	850	0.938
Marketplace Site	25,730	24,930	0	800	0.946
Southbridge West Site	93,150	86,050	7,100	0	0.912
Rose Garden Site	61,560	42,110	0	19,450	0.912

Proposed C Value Calculations					
Site	Total Area (SF)	Impervious Area (SF) C = 0.95	Desert Landscaping (SF) C=0.45	Landscape w/weed barrier (SF) C=0.83	Weighted C value
Triangle Site	102,454	101,320	1,134	0	0.944
Marketplace Site	25,730	25,471	259	0	0.945
Southbridge West Site	93,150	92,513	637	0	0.947
Rose Garden Site	61,560	60,933	627	0	0.945

Net Weighted C Calculation			
Site	Existing Weighted C Value	Proposed Weighted C Value	Net Weighted C Value
Triangle Site	0.938	0.944	0.006
Marketplace Site	0.946	0.945	-0.001
Southbridge West Site	0.912	0.947	0.035
Rose Garden Site	0.912	0.945	0.033

Calculations for required retention are as follows:

$$V = C(R/12)A$$

R = 2.15 inches rainfall (100 year 2 hr storm)

A = 102,454 SF – Triangle Site

25,730 SF – Marketplace Site

93,150 SF – Southbridge West Site

61,560 SF – Rose Garden Site

V = 110 CF – Triangle Site

-5 CF – Marketplace Site

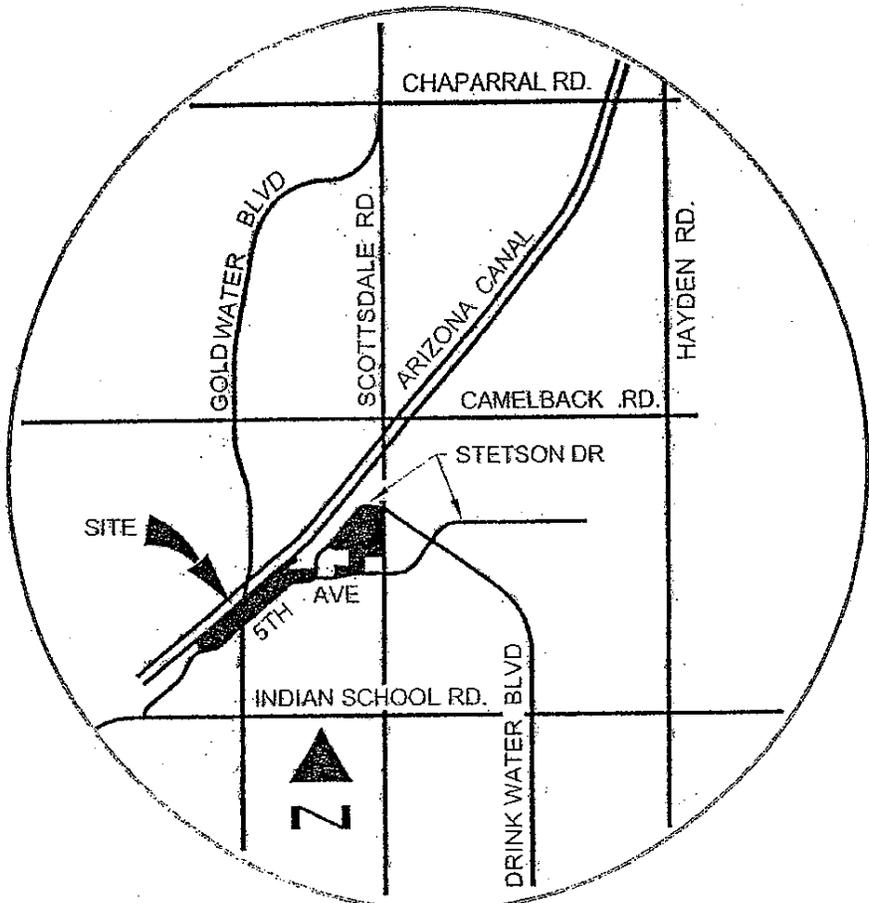
584 CF – Southbridge West Site

364 CF – Rose Garden Site

1,053 CF – Total Retention Required – All Sites

The total retention required for the pre vs. post sites is relatively small. No retention is proposed. A storm water retention waiver will be applied for during the construction document preparation.

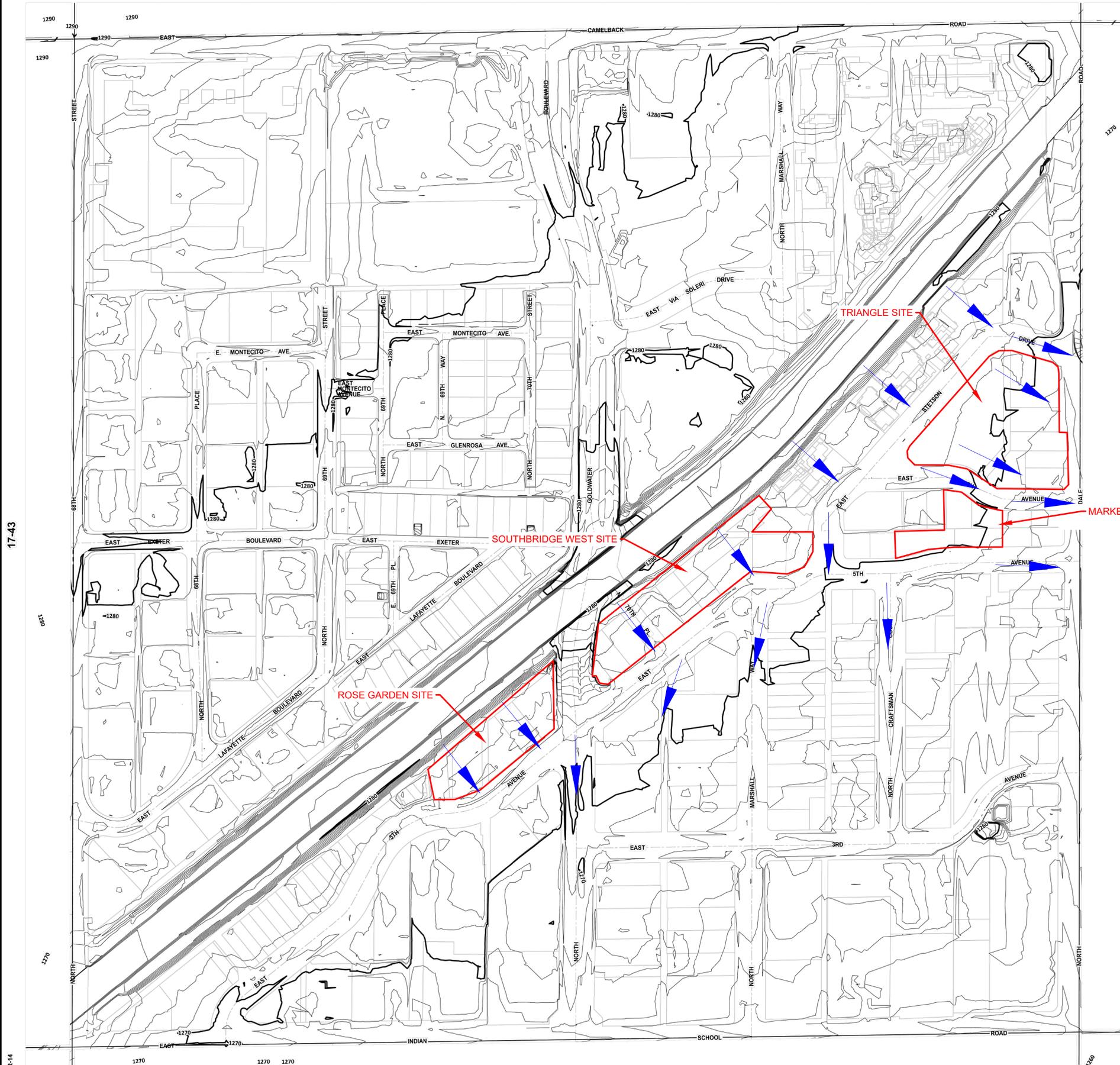
\\P:\base-pc\gookin_file_drive\Land Projects\2591 S BRIDGE EXPANSION\DWG\DETAIL VIC MAP.dwg, Active Tab: VIC MAP, Aug 28, 2018 - 10:37am Ed



VICINITY MAP
SW 1/4 SEC 22 T2N R4E
NOT TO SCALE

SOUTHBRIDGE EXPANSION
EXHIBIT 1 LOCATION OF THE PROJECT

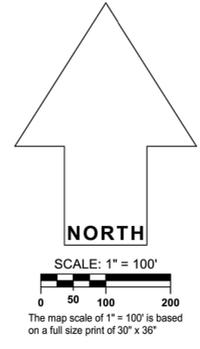
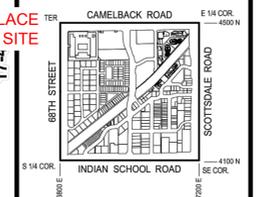
VICINITY MAP
EXHIBIT 1



GENERAL NOTES:
 - THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7792.
 - THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE NAD 83 GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN TO CALCULATED SECTION CORNERS AND ARE NOTED AS CALCULATED ON THE MAP.

LEGEND:

VICINITY MAP



CONTOUR QUARTER SECTION MAP

17-44

SE 1/4 SEC. 22 T2N R4E

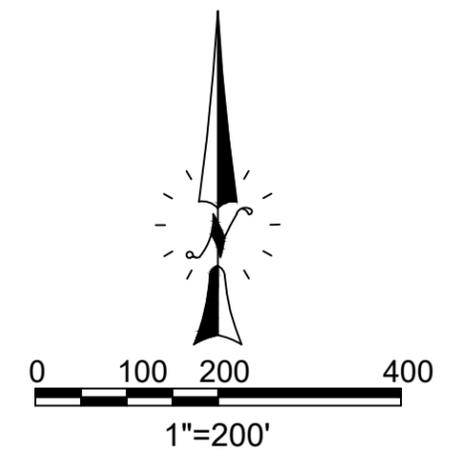
EXHIBIT 2

CITY OF SCOTTSDALE
 SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS
 3623 North Drinkwater Boulevard
 Scottsdale, Arizona 85251

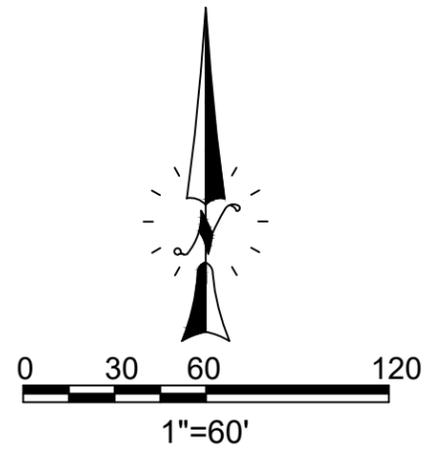
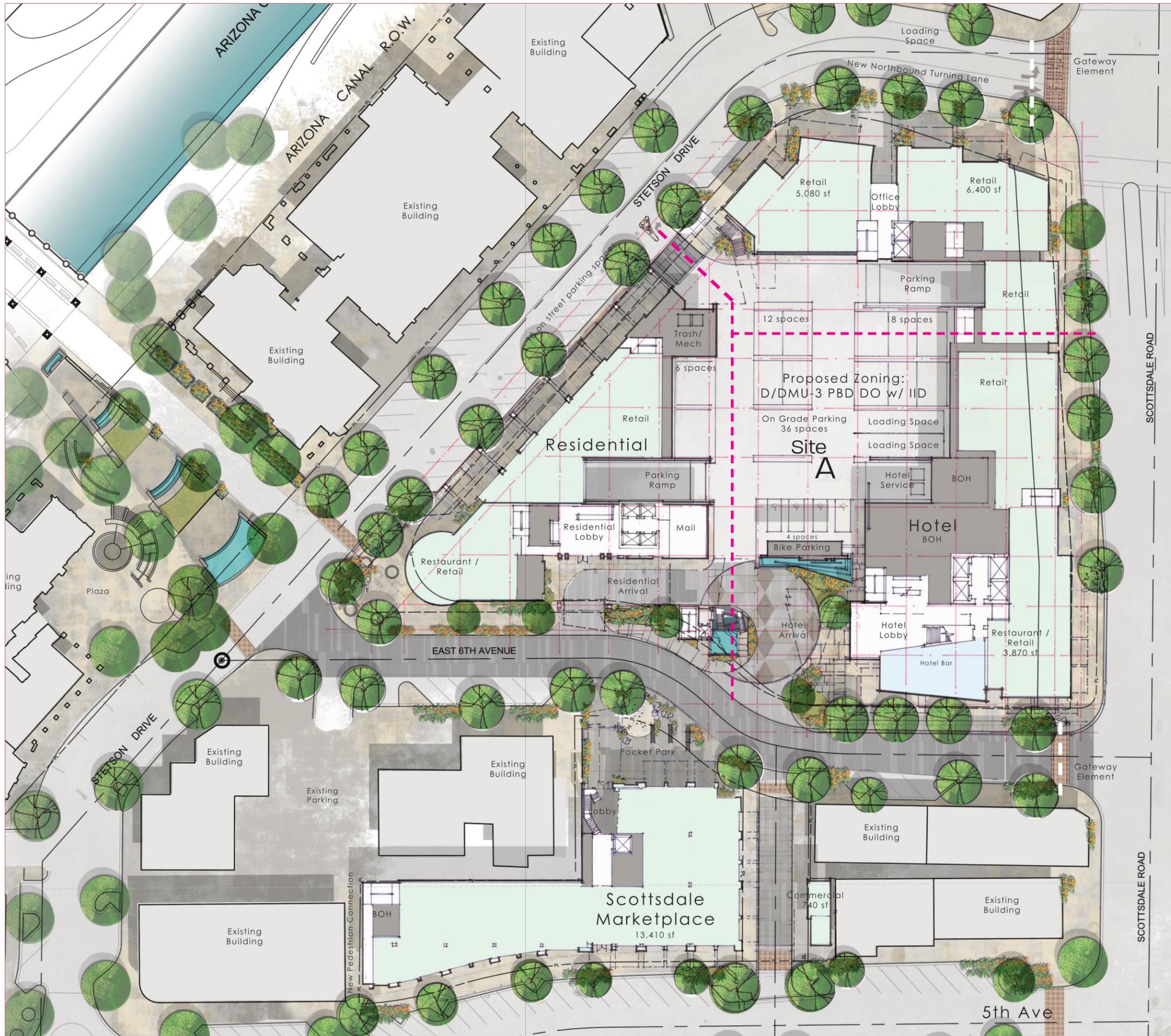
NOTICE
 THIS DOCUMENT IS PROVIDED FOR GENERAL INFORMATION PURPOSES ONLY. THE CITY OF SCOTTSDALE DOES NOT WARRANT THE ACCURACY OF ANY INFORMATION CONTAINED HEREIN, AND IT SHOULD NOT BE RELIED UPON WITHOUT FIELD VERIFICATION.
 THE CITY OF SCOTTSDALE

17-43

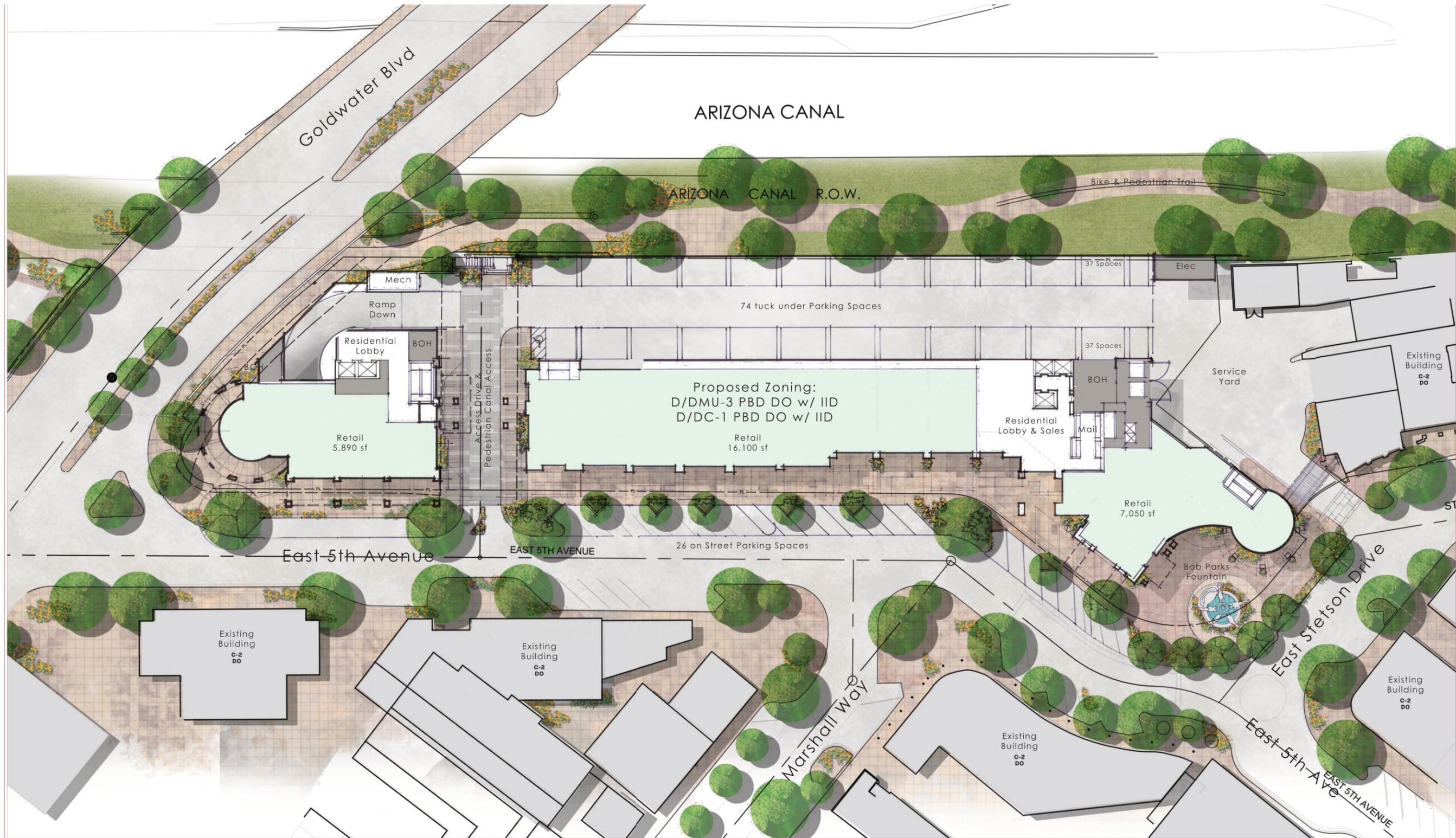
26-APR-14



OVERALL SITE PLAN
AERIAL PHOTOGRAPH
PROPOSED CONDITION
EXHIBIT 3



**TRIANGLE AND
MARKETPLACE SITES
AERIAL PHOTOGRAPH
PROPOSED CONDITION
EXHIBIT 4**



ARIZONA CANAL

ARIZONA CANAL R.O.W.

Bike & Pedestrian Trail

Goldwater Blvd

East 5th Avenue

EAST 5TH AVENUE

26 on Street Parking Spaces

74 tuck under Parking Spaces

Proposed Zoning:
D/DMU-3 PBD DO w/ IID
D/DC-1 PBD DO w/ IID

Retail
5,890 sf

Retail
16,100 sf

Retail
7,050 sf

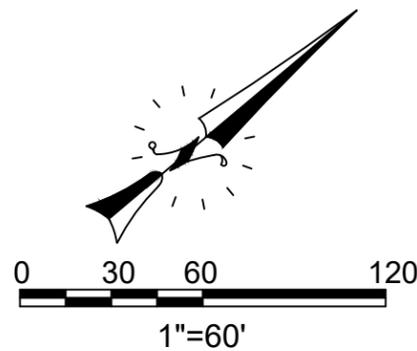
Existing Building
C-2
DO

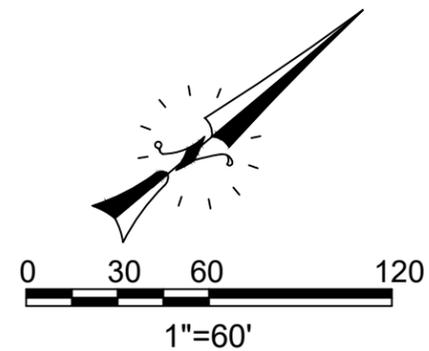
Existing Building
C-2
DO

Existing Building
C-2
DO

Existing Building
C-2
DO

SOUTHBRIDGE WEST
AERIAL PHOTOGRAPH
PROPOSED CONDITION
EXHIBIT 5

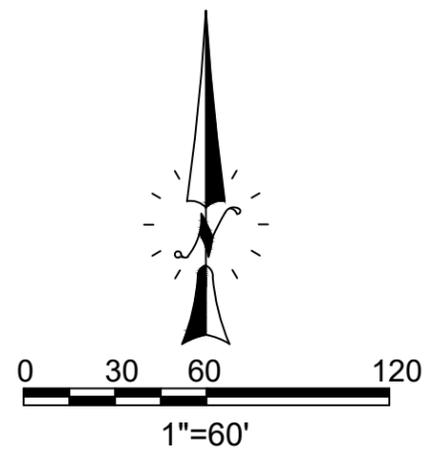




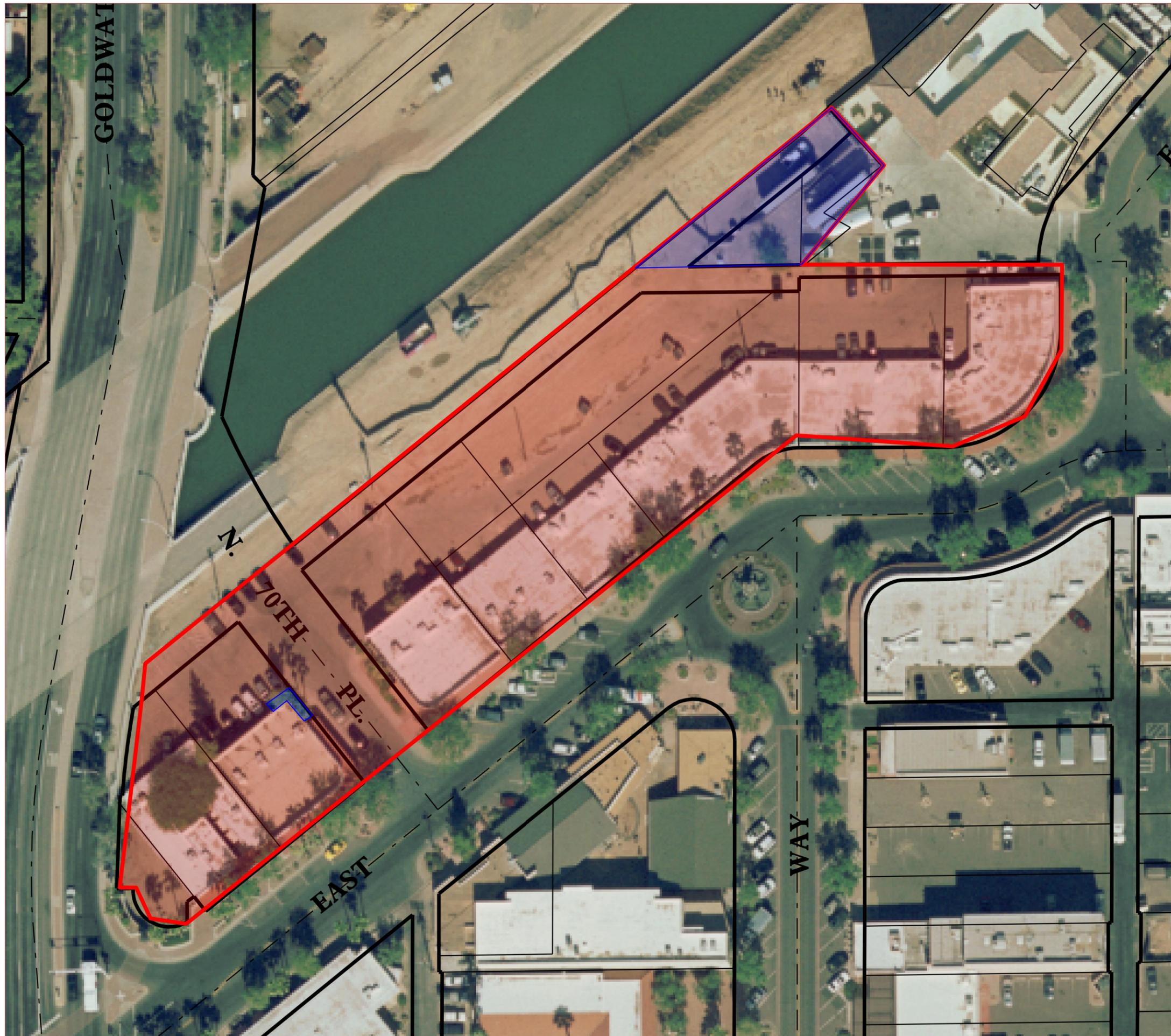
ROSE GARDEN
 AERIAL PHOTOGRAPH
 PROPOSED CONDITION
 EXHIBIT 6

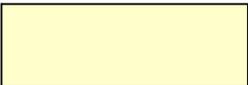


- IMPERVIOUS
- WEED BARRIER
- LANDSCAPE



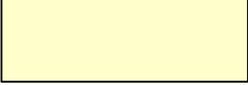
TRIANGLE AND
MARKETPLACE SITES
EXISTING USES
EXHIBIT 7

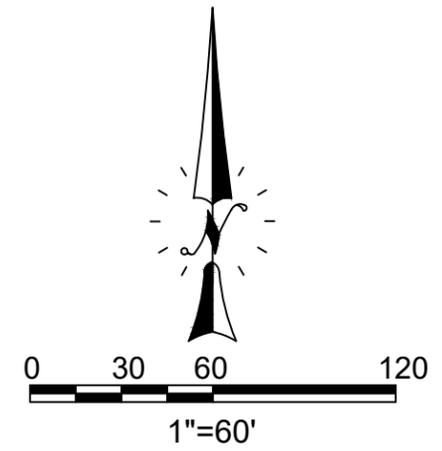


-  IMPERVIOUS
-  WEED BARRIER
-  LANDSCAPE

SOUTHBRIDGE WEST
EXISTING USES
EXHIBIT 8



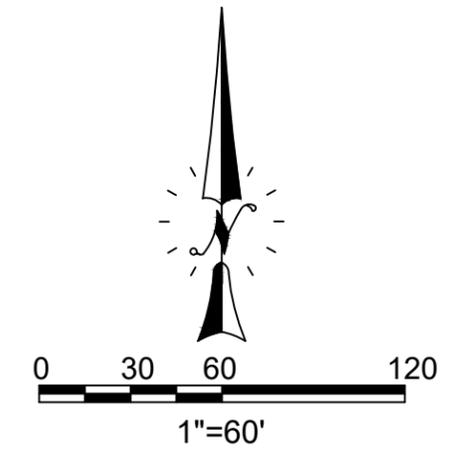
-  IMPERVIOUS
-  WEED BARRIER
-  LANDSCAPE



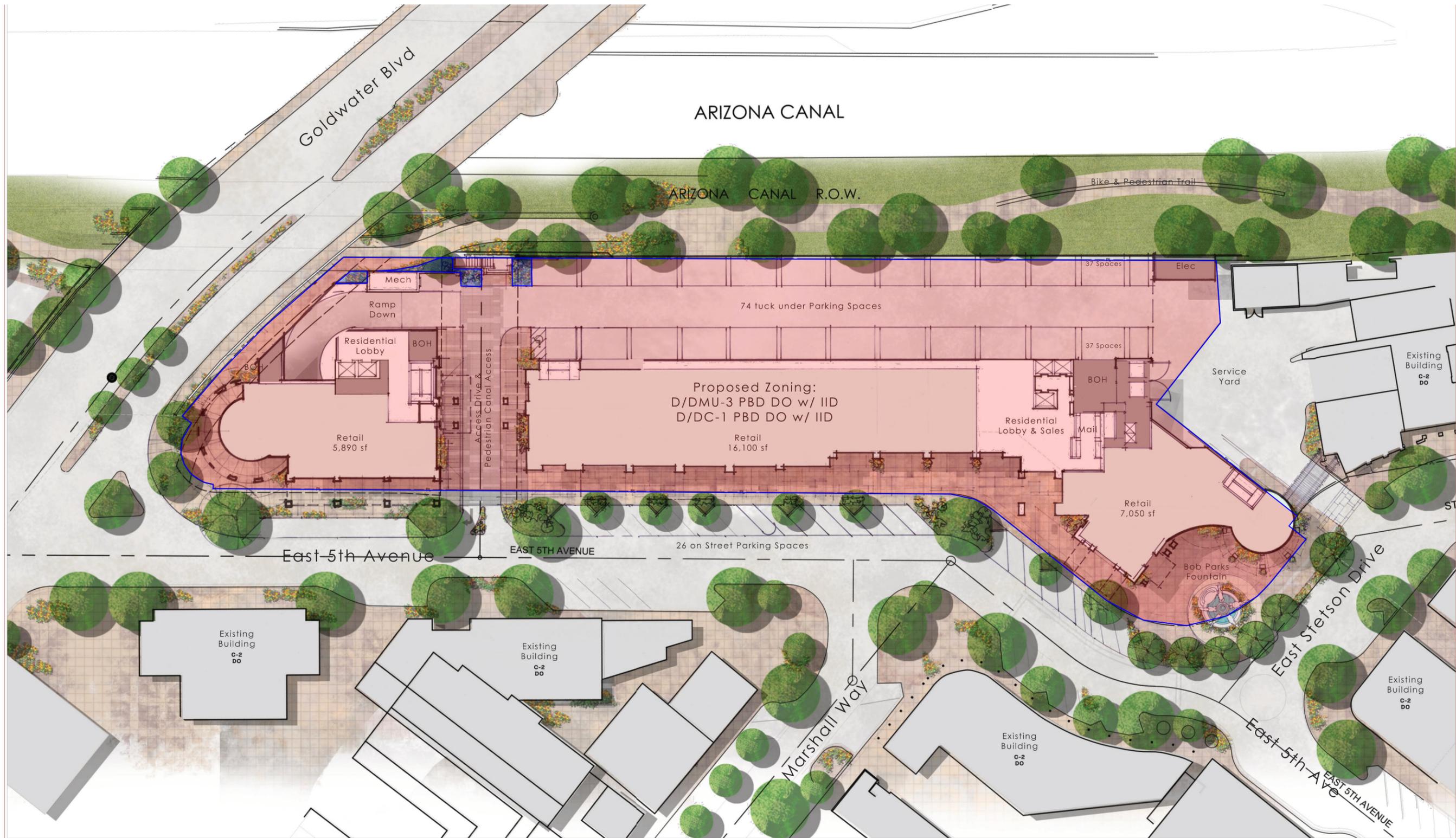
ROSE GARDEN
EXISTING USES
EXHIBIT 9



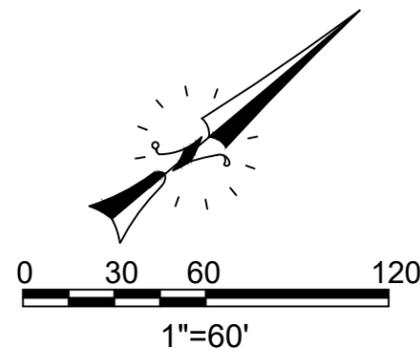
- IMPERVIOUS
- WEED BARRIER
- LANDSCAPE



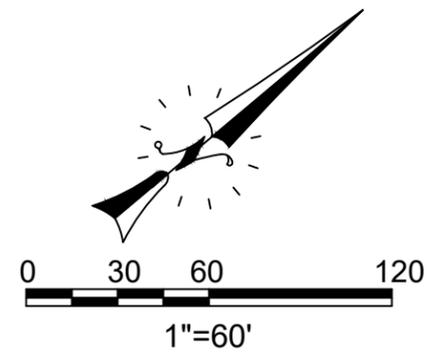
**TRIANGLE AND
MARKETPLACE SITES
PROPOSED USES
EXHIBIT 10**



- IMPERVIOUS
- WEED BARRIER
- LANDSCAPE



SOUTHBRIDGE WEST PROPOSED USES EXHIBIT 11



- IMPERVIOUS
- WEED BARRIER
- LANDSCAPE

**ROSE GARDEN
PROPOSED USES
EXHIBIT 12**

National Flood Hazard Layer FIRMette



30°6.63'N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LA

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, V
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard of 1% annual chance flood with a depth less than one foot or with areas of less than one square mile
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
OTHER FEATURES		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/19/2019 at 7:50:02 PM and does not reflect changes or amendments subsequent to this date at any time. The NFHL and effective information may change or become superseded by new data over time.

FIRMETTE EXHIBIT 13

11°55'25.44"W

250 500 1,000 1,500 2,000 Feet 1:6,000

33°29'36.63"N